CLAIMS

 Measuring method on an electric motor with a rotor and a stator for determining the fly height and/or axial play, the rotor being mounted, and in particular fluid-mounted, on the stator, comprising:

operating the electric motor at a defined measuring speed, at which the rotor is in a specific axial position in relation to the stator, and determining this relative axial position;

bringing the rotor in a defined manner, with the motor at a standstill, into a first stop position in relation to the stator;

bringing the rotor in a defined manner, with the motor at a standstill, into a second stop position in relation to the stator, lying opposite the first stop position; and

respectively measuring the relative axial position between the rotor and the stator in the two stop positions.

- 2. Measuring method according to Claim 1, wherein the measuring speed corresponds essentially to the nominal speed of the electric motor.
- Measuring method according to Claim 1, wherein the positional measurement takes place by means of one or more distance sensors.

- 4. Measuring method according to Claim 1, wherein the stator is kept fixed in place and the relative axial position between the stator and the rotor is measured.
- 5. Measuring method according to Claim 4, wherein a fixed distance sensor is provided for measuring the relative axial position between the stator and the rotor.
- Measuring method according to Claim 1, wherein the rotor is pressed against the stator to set the corresponding stop position.
- 7. Measuring method according to Claim 6, wherein the pressing of the rotor against the stator takes place by means of compressed air.
- 8. Measuring method according to Claim 7, wherein air pulses are used for pressing the rotor against the stator.
- 9. Measuring method according to Claim 8, wherein fewer than ten pulses per minute are used.
- Measuring method according to Claim 1, wherein the rotor is pulled away from the stator to set the corresponding stop position.
- 11. Measuring method-according to Claim 10, wherein the rotor is pulled away from the stator by applying negative pressure.

- 12. Measuring method according to Claim 10, wherein the rotor is pulled away from the stator by means of a pressure bell.
- 13. Measuring method according to Claim 12, wherein the pressure bell is cardanically suspended.
- 14. Measuring method according to Claim 1, wherein the deformation of a part of the electric motor to which force is applied in the stop positions is measured.
- 15. Measuring method according to Claim 14, wherein a distance sensor for measuring the deformation is provided.
- 16. Measuring method according to Claim 15, wherein the deformation/distance sensor is disposed coaxially in relation to a central axis of a shaft of the electric motor or in relation to the latter at such a distance that its field of view lies in a projection of the stop face of the shaft in a bearing mount for the shaft.
- 17. Measuring method according to Claim 15, wherein the deformation/distance sensor is aligned with a base plate of the stator.
- 18. Measuring method according to Claim 15, wherein a field of view of the deformation/distance sensor is in the opposite direction to a field of view of a distance sensor for determining the relative position between the rotor and the stator.

- 19. Measuring method according to Claim 14, wherein, in the determination of the fly height and/or the axial play of the shaft by means of stop positions, the deformation of the stop faces caused by force being applied is taken into account.
- 20. Measuring method according to Claim 1, wherein at first the electric motor is operated at a specific measuring speed, then, with the motor at a standstill, the rotor is pulled away from the stator to set the first stop position, and subsequently the rotor is pressed against the stator to set the second stop position.
- 21. Measuring method according to Claim 1, wherein at first the electric motor is operated at a specific measuring speed, then, with the motor at a standstill, the rotor is pressed against the stator to set the second stop position, and subsequently, with the motor at a standstill, the stator is pulled away from the rotor to set the first stop position.
- 22. Measuring device for an electric motor, by means of which an axial position of a rotor which is mounted, and in particular fluid-mounted, on a stator can be determined, comprising:

a pushing and pulling device for bringing the rotor and the stator in a defined manner into a first axial position in relation to each other, in which the rotor lies in a first stop position in relation to the stator, and for bringing the rotor into a second stop position, in which the rotor lies in an opposite, second stop position in relation to the stator.

- 23. Measuring device according to Claim 22, wherein the pushing and pulling device is operable in a pulsed manner.
- 24. Measuring device according to Claim 22, wherein the pushing and pulling device is usable to apply compressed air to the electric motor.
- 25. Measuring device according to Claim 22, wherein the pushing and pulling device is usable to apply negative pressure to the electric motor.
- 26. Measuring device according to Claim 22, wherein the pushing and pulling device comprises a pressure bell for pulling the rotor away from the stator.
- 27. Measuring device according to Claim 22, wherein the pushing and pulling device comprises a pressure cylinder for establishing a pressing force of the rotor against the stator.
- 28. Measuring device according to Claim 22, wherein the pushing and pulling device is cardanically suspended.
- 29. Measuring device according to Claim 22, wherein a distance sensor is provided for determining the relative axial position between the stator and the rotor.
- 30. Measuring device according to Claim 29, wherein the distance sensor is fixedly positioned.

- 31. Measuring device according to Claim 22, wherein a deformation sensor is provided for determining the deformation of a region of the electric motor to which force is applied by means of the pushing and pulling device.
- 32. Measuring device according to Claim 31, wherein the deformation sensor comprises a distance sensor.
- 33. Measuring device according to Claim 31, wherein the deformation sensor is fixedly positioned.